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July 26, 2012

To: Supervisor, Zev Yaroslavsky, Chairman
Supervisor Gloria Molina
Supervisor Mark Ridley-Thomas
Supervisor Don Knabe
Supervisor Michael D. Antonovich

From: Tom Tindall
Director

Tom Tindall

Richard Sanchez
Chief Information Officer

Richard Sanchez

Subject: **COUNTYWIDE VIDEOCONFERENCING REPORT**
(Item 4, Agenda of July 3, 2012)

On July 3, 2012, on motion of Supervisor Yaroslavsky as amended by Supervisor Ridley-Thomas, your Board instructed the Director of Internal Services (ISD) in conjunction with the Chief Information Officer (CIO), to:

1. Review the potential benefits from integration of existing independent departmental videoconferencing systems into the ISD managed central system;
2. Report back within the next 30 days with the assessment and recommendations for the implementation of an expanded and integrated videoconferencing network throughout the County system;
3. Carry out a thorough network and bandwidth utilization assessment for each County location, prior to any videoconference equipment implementation to ensure usability of the service;
4. Follow the International Telecommunication Union standards for videoconferencing protocols and audio/video compression to maintain compatibility across County and worldwide systems;
5. Provide adequate training for County employees and create user-friendly training materials available online and offline;
6. Mandate the use of videoconference equipment when possible as an alternative for participants to physically attend meetings.

This memo provides a report for each of your Board's directives.

BACKGROUND

The ISD-managed central videoconferencing infrastructure was funded by the Department of Mental Health (DMH) and the Department of Public Health (DPH) in Fiscal Year (FY) 2010-11. It was deployed on July 1, 2011. The infrastructure is comprised of video bridging equipment to enable multi-point conferences, centralized directory, secured external access, recording capabilities and central management. This system is hosted at ISD's Downey data center with a load-balanced active system at the Orange County Local Recovery Center (LRC).

The central videoconference infrastructure is currently used by 22 County departments, including DMH, DPH, the Department of Health Services (DHS), Auditor-Controller, Department of Public Social Services, ISD, and CIO and is also heavily used by the justice system departments. Within the last twelve months, ISD facilitated deployment of many videoconferencing business applications including: Department of Human Resources remote interviews, DMH mental health teleconferencing, DPH disaster emergency response, DHS nurse training, Public Defender and Alternate Public Defender attorney/client meetings, and Sheriff video-arraignment and inmate visitation. More uses are now under development.

Recently, ISD and the CIO completed a competitive solicitation that resulted in a master list of videoconference end-point equipment available to integrate with the central videoconference infrastructure. End-point equipment from Cisco Tandberg, Polycom and Lifesize is now available for County departments to purchase under the Consolidated Videoconferencing Purchase Program (CVPP) administered by the CIO.

For departments that have their own standalone multi-point bridging equipment, ISD and the CIO are working to phase out such systems in favor of using the central infrastructure.

STATUS OF BOARD MOTION

The following sections recap the components of the Board motion, followed by a current status of each.

- 1. Review the potential benefits from integration of existing independent departmental videoconferencing systems into the ISD managed central system.***

By centralizing videoconferencing systems, the County would gain efficiencies in the management, operations, and maintenance of videoconference systems. Centralization

would also better utilize bridging licenses by allowing countywide concurrent use rather than just individual department use.

The County's central videoconference infrastructure has port and license capacity to incorporate all existing County video end-point devices. Phasing out existing standalone departmental bridging systems would yield cost savings in licenses, equipment maintenance/refresh, and operational costs. It would also result in consistent registration, directory, scheduling and recording capabilities.

ISD has completed an initial assessment to identify existing independent departmental systems, and will collaborate with affected departments to evaluate transitioning onto the centralized infrastructure. All departments will retain responsibility for their own video end-point devices, including maintenance and refresh, unless explicit support agreements have been established with ISD.

2. Report back within the next 30 days with the assessment and recommendations for the implementation of an expanded and integrated videoconferencing network throughout the County system.

Newer videoconference units use high definition technology, which requires a higher amount of telecommunications bandwidth. As usage expands, the County will need to increase its Enterprise Network capacity and the central videoconferencing infrastructure.

ISD has been upgrading the County's Enterprise Network infrastructure with newer and higher bandwidth data circuits called Metro Ethernet, which is a fiber optics-based, high capacity, scalable network at more cost effective rates to support videoconferencing, Voice over Internet Protocol (VoIP), and other emerging applications. ISD has already upgraded over 200 sites with this technology and is underway to upgrade 300 more sites over the next three years.

Not all County locations are capable of videoconferencing due to limitations of network availability from the carriers. These sites are typically smaller, remote locations; hence fiber optic cable placement is cost prohibitive. ISD will continue to assess options to enable videoconferencing for these sites.

The in-building Local Area Networks (LAN) that connect the videoconferencing units to the Enterprise Network must also be considered. The LAN equipment and building wiring vary from location to location and may not be capable of supporting high definition videoconferencing. Readiness assessments will be necessary for each deployment to ensure that the LANs are capable of reliable videoconferencing.

The central infrastructure currently has 455 devices registered as a combination of fixed room-systems and desktop/laptop systems. Typically only a fraction of total registered

users access the central infrastructure at any one time for multi-way video bridging sessions. The central infrastructure's licensing agreement allows for this concurrent usage model.

The central infrastructure currently has 118 total video ports. The initial funding prepaid five years of recurring equipment maintenance costs. The current system can be expanded by 160 additional video ports (and licenses) at a one-time cost of approximately \$995,000, plus a recurring annual cost of \$70,000. Any further expansion would require funding to purchase additional system licenses, equipment, housings, racks, and other components.

ISD currently dedicates one full time network system administrator to operate and maintain the central infrastructure. As the central infrastructure user base increases, additional staffing, equipment and resources will be required to maintain the central video services at a specific service level.

Recommended next steps are included at the end of this document.

3. Carry out a thorough network and bandwidth utilization assessment for each County location, prior to any videoconference equipment implementation to ensure usability of the service.

ISD uses specialized tools and processes to document the Enterprise Network bandwidth baseline for all County locations. This information is regularly updated to reflect bandwidth changes or upgrades. ISD recently launched a Capacity Planning program for the Enterprise Network. This program identifies site-specific bandwidth information, such as total/peak utilization, top users, resource contentions, and bandwidth availability. Review and analysis of this information will be part of the standard operating procedure assessment, prior to deploying any videoconference equipment, to ensure appropriate video quality and a satisfactory user experience.

ISD does not manage all departmental LANs, which are critical to a successful videoconference experience. Consequently, ISD will collaborate with LAN administrators to specify minimum Quality of Service network requirements.

The CIO and ISD will develop a pre-deployment checklist to ensure network, facility and support readiness, which will be required before end-point equipment is ordered. ISD will collaborate with each department to validate site readiness as part of the on-boarding process.

4. Follow the International Telecommunication Union (ITU) standards for videoconferencing protocols and audio/video compression to maintain compatibility across County and worldwide systems.

The County's central infrastructure was designed and implemented to be 100% compliant with ITU standards for videoconferencing protocols and audio/video compression to maintain full compatibility across County and worldwide systems.

The CVPP master agreement to enable departments to purchase their videoconference end-point equipment was also based on full compliance of industry and ITU standards.

Specific standards for video, audio, network protocols, encryption, etc., are available from ISD.

5. Provide adequate training for County employees and create user-friendly training materials available online and offline.

ISD has built an online portal that contains videoconference user guides, general equipment/system information, frequently asked questions, request forms, and contact information to request information or video services. This ISD portal is being optimized and refined and will be migrated to the countywide portal at a later date.

ISD is in the process of creating self-help training videos for end users. The videos will be online and available on-demand 24x7. Target availability for the videos is December 2012. ISD is also in the process of producing hard copy self-help user and training guides.

ISD has published user guides for external non-County agencies or constituents who need to videoconference with County staff.

6. Mandate the use of videoconference equipment when possible as an alternative for participants to physically attend meetings.

Departments report that teleconferencing yields productivity gains as staff spends less time travelling between sites for meetings. This will also improve delivery of services to constituents, reduce carbon footprint, reduce vehicle costs and liability, and meet local air quality goals.

ISD and the CIO will continue to work with departments to expand videoconference capabilities, which will enable departments to reduce the need to physically attend meetings.

NEXT STEPS

ISD will implement the following steps to expand the County's videoconferencing network:

- Collaborate with departments with existing standalone systems to evaluate transitioning to the central infrastructure.
- Develop and enhance pre-deployment checklists, on-boarding processes, online and offline training material and user guides.
- Continue to upgrade the Enterprise Network to higher capacity in order to support videoconferencing and other emerging applications.
- Conduct technology “demo days” for new users and to update all users of new features and capabilities of the central infrastructure.
- Provide quarterly utilization reports for each end user department that uses the central infrastructure.
- Collaborate with CIO and CEO to identify funding methodologies for infrastructure expansion and refresh.

CIO will:

- Work with ISD to develop a process that requires departmental attestation of videoconferencing readiness, via a readiness checklist, prior to purchase of any end point equipment for that location.
- Continue to solicit departmental feedback and to develop countywide strategies for videoconferencing through an established CIO Council Focus Area, resulting in directives or policies for your Board’s consideration when appropriate.

If you have any questions, please contact Tom Tindall of ISD at (323) 267-2101 or Richard Sanchez of the CIO at (213) 253-5600. Your staff may also contact Robert King of ISD Telecommunications Branch at (562) 940-2907.

RS:TT:rk

c: Executive Officer, Board of Supervisors
Operations Cluster Board Deputies
Information Technology Board Deputies
Chief Executive Officer (Fujioka, Sandt)